

10/530764

JC13 Rec'd PCT/PTO 08 APR 2005

EP0310391

08-12-2004 P032653/WO/1

PCT/EP03/10391

New document of 06.12.2004

- 2 -

5

10

15

20

25

30

water
drops present in the form of a mist in the air are

AMENDED SHEET

PCT/EP03/10391New document of 06.12.2004

- 3 -

precipitated on the bulkhead and drop down to the well bottom.

5 In a known assembly space (DE-C-198 11 189), the water separator is formed by a filter housing which is arranged below the access orifice and of which the housing orifice surrounding an air filter points downward, that is to say away from the access orifice. The outlet of the filter housing is placed congruently
10 on a wall orifice in the dashboard separating off the passenger space. That region of the filter housing which faces the access orifice runs, in the installation position, obliquely downward in a direction pointing away from the dashboard and is
15 provided at the end with a water collecting channel which guides the water dropping in from outside through the access orifice past the filter housing laterally. The filter in the inlet of the filter housing is consequently not wetted by the water running out.

20 In a vehicle with a front window and windshield wiper (FR-A-2 623 455), it is known, by means of a [lacuna] in an assembly space which receives the windshield wiper motor and the windshield wiper mechanism and
25 which is sealed off relative to the engine space, to provide a drip molding underneath the front window for discharging the water running off on the front window. The molding wall, facing away from the front window, of the drip molding is drawn up as far as the hood and
30 possesses an orifice, via which air can flow into the assembly space and from there to an orifice in the dashboard separating off the passenger space. The molding wall having the orifice is prolonged downward

PCT/EP03/10391New document of 06.12.2004

- 4 -

beyond the molding bottom and forms a water separator. By means of this water separator, the air flowing into the assembly space is deflected through more than 90° before it can arrive at the dashboard orifice.

5

The object on which the invention is based is to combine more cost-effectively in structural terms an assembly space of the type initially mentioned with an air supply for the supply of fresh air to an air consumer arranged in the passenger space, for example to a ventilation blower for the passenger space or to a blower of an air conditioning system.

The object is achieved, according to the invention, by means of the features of patent claim 1.

The assembly space according to the invention has the advantage of a combination, cost-effective with regard to the manufacturing costs, of the fresh air supply to the passenger space and of an easily accessible reception box for various operating assemblies and components, such as a battery, lines and a servomotor and windshield wiper motor, around which fresh air flows. By virtue of the combination, a separate air supply device, such as provided in DE 197 34 146 A1, becomes unnecessary, so that, by the air supply device being dispensed with, the installation space to be reserved in the engine space is also reduced to a considerable extent. The assembly space according to the invention, because of its very low construction space requirement, is particularly suitable for vehicles of the compact class. The water separator formed on the lower shell ensures a very good

PCT/EP03/10391New document of 06.12.2004

- 4a -

dehumidification of the air entering the passenger space or supplied to the air conditioning system. Preferably, the lower shell is fastened to the underside of the hood and consists of sheet metal, although it is possible for the hood inner panel to be formed as a lower shell in the region of the assembly space, so that no additional component is necessary for the lower shell. Overall, the incoming air connection between the air inlet orifice in the hood and the assembly space with water separator can be configured optimally with regard to the manufacturing costs and to the installation space.

Advantageous embodiments of the assembly space according to the invention, together with expedient developments and refinements of the invention, are specified in the further patent claims.

According to an advantageous embodiment of the invention, a lower shell is provided which covers the air inlet orifice in the hood and is sealed off relative to the hood and which can be placed onto the continuous seal surrounding the access orifice and, within its region surrounded by the continuous seal, has an air passage orifice. Preferably, the lower shell is fastened to the underside of the hood and consists of sheet metal, although it is possible for the hood inner panel to be formed as a lower shell in the region of the assembly space, so that no additional component is necessary for the lower shell. By virtue of these structural measures, the incoming air connection between the air inlet orifice in the hood and the assembly space with water separator can be configured

PCT/EP03/10391

New document of 06.12.2004

- 4b -

optimally with regard to the manufacturing costs and to the installation space required.

PCT/EP03/10391

New document of 06.12.2004

- 11 -

5

10

15

20

25

30

the closed hood 17 is pressed
with its underside. The cover 27 thus covering the

AMENDED SHEET

PCT/EP03/10391New document of 06.12.2004

- 12 -

access orifice 15 has an air passage orifice 45 and a water separator 38. For this purpose, an air guide plate 40 is cut out from a covering surface spanning the clear orifice within the collar 28 and is bent out of the covering surface in such a way that it projects through the access orifice 15 and runs obliquely with respect to the axis of the access orifice 15. This results at the free edge of the air guide plate 40, toward the lower front edge of the collar 28, in the formation of an air passage orifice 45 which lies on the front side, facing away from the dashboard orifice 16, of the air guide plate 40, so that the air flowing into the assembly space 10 via the air inlet orifice 21 in the hood 17 and via the air passage orifice 45 is deflected through somewhat less than 180° and, on the rear side of the air guide plate 40, flows to the dashboard orifice 16 forming the waste air orifice 43 of the assembly space 10 and at the same time washes around the operating assemblies within the assembly space 10. At the leading edge of the air guide plate 40, which may likewise be provided with a web 401, the water droplets in the form of a mist which are precipitated on the air guide plate 40 from the moist air drop down as condensation water drops to the bottom 36 of the assembly space 10.

It is also possible to design the assembly space 10 as a separate plastic box open at the top which is mounted between the dashboard 13 and partition 14. The outflow orifice 43 is then arranged in the box wall bearing against the dashboard 13, in such a way that said outflow orifice is congruent with the dashboard orifice 16. The box bottom has introduced in it, at a somewhat

AMENDED SHEET

PCT/EP03/10391

New document of 06.12.2004

- 12a -

lower point, the water outflow 39 which may be designed as a simple hole or as an outwardly projecting connection piece.

PCT/EP03/10391New document of 06.12.2004

- 13 -

DaimlerChrysler AG

Patent Claims

5 1. An assembly space for a motor vehicle for the
reception of operating assemblies, which is mounted in
front of a dashboard (13) separating a passenger space
(12) from an engine space (11) capable of being covered
by means of a hood (17) and which is closed all round
10 with the exception of an access orifice (15) pointing
towards the hood (17), with a continuous seal (31),
surrounding the access orifice (15) all round, for
gastight sealing off relative to the engine space (11),
with an incoming air connection to an air inlet orifice
15 (21) arranged in the hood (11), and with a waste air
orifice (43) which is approximately congruent with a
dashboard orifice (16) in the dashboard (13) serving as
an intake orifice of an air consumer in the passenger
space (12), and with a water separator (38),
20 characterized by a lower shell which covers the air
inlet orifice (21) in the hood (17) and is sealed off
relative to the hood (17) and which can be placed onto
the continuous seal (31) and, within its region
surrounded by the continuous seal (31), has an air
25 passage orifice (24), and in that the water separator
(38) is formed on the lower shell (23).

2. The assembly space as claimed in claim 2,
characterized in that the lower shell (23) is fastened
30 to the underside of the hood (17), preferably in one
piece with a hood inner panel.

3. The assembly space as claimed in claim 2,

PCT/EP03/10391New document of 06.12.2004

- 14 -

characterized in that the water separator (38) has an air guide plate (40) which projects from the lower shell (23) through the access orifice (15) and runs obliquely with respect to the axis of the access orifice (15) and which extends below part of the access orifice (15), and in that the waste air orifice (43) lies near the access orifice (15), behind the rear side, facing away from the air passage orifice (24), of the air guide plate (40).

10

4. The assembly space as claimed in claim 3, characterized in that the lower shell (23) has a trough-shaped design with a trough bottom (25') and with a flangelike trough edge (26) surrounding the trough orifice, for lying on the continuous seal (31) surrounding the access orifice (15).

15

5. The assembly space as claimed in claim 4, characterized in that the trough bottom (25') projects in the manner of a lean-to roof, with a narrow and a wide roof surface (251', 252') and with an underlying roof ridge (253'), through the access orifice (15), and in that the air passage orifice (24) is arranged, preferably at a distance from the roof ridge (253'), in the narrow roof surface (251'), and the wide roof surface (252') forms the air guide plate (40).

20

25

6. The assembly space as claimed in one of claims 1 - 5, characterized in that a cover (27) with a peripheral collar (28) and with a peripheral flange (29) arranged at one end of the collar (28) is arranged between the access orifice (15) and the lower shell (23), and in that the cover (27) lies with its peripheral flange

30

PCT/EP03/10391New document of 06.12.2004

- 15 -

(29) on the continuous seal (31) and, on its collar edge remote from the flange, carries a shell seal (30), onto which the lower shell (23) can be pressed.

5 7. An assembly space for a motor vehicle for the reception of operating assemblies, which is mounted in front of a dashboard (13) separating a passenger space (12) from an engine space (11) capable of being covered by means of a hood (17) and which is closed all round
10 with the exception of an access orifice (15) pointing towards the hood (17), with a continuous seal (31), surrounding the access orifice (15) all round, for gastight sealing off relative to the engine space (11), with an incoming air connection to an air inlet orifice
15 (21) arranged in the hood (11), and with a waste air orifice (43) which is approximately congruent with a dashboard orifice (16) in the dashboard (13) serving as an intake orifice of an air consumer in the passenger space (12), and with a water separator (38),
20 characterized by a cover which covers the air inlet orifice (21) in the hood (17) and which lies on the continuous seal (31), can be sealed off relative to the hood (17) by means of a continuous hood seal (44) surrounding the air inlet orifice (21) and, within its
25 region surrounded by the continuous seal (31), has an air passage orifice (45), and in that the water separator (38) is integrated in the cover (27).

30 8. An assembly space for a motor vehicle for the reception of operating assemblies, which is mounted in front of a dashboard (13) separating a passenger space (12) from an engine space (11) capable of being covered by means of a hood (17) and which is closed all round

PCT/EP03/10391New document of 06.12.2004

- 16 -

with the exception of an access orifice (15) pointing towards the hood (17), with a continuous seal (31), surrounding the access orifice (15) all round, for gastight sealing off relative to the engine space (11),
5 with an incoming air connection to an air inlet orifice (21) arranged in the hood (11), and with a waste air orifice (43) which is approximately congruent with a dashboard orifice (16) in the dashboard (13) serving as an intake orifice of an air consumer in the passenger
10 space (12), and with a water separator (38), characterized by a lower shell (23) covering the air inlet orifice (21) in the hood (17) and sealed off relative to the hood (17) and by a cover (27) which can be sealed off relative to the lower shell (23) by means
15 of a shell seal (30) and which lies on the continuous seal (31), and in that the water separator (38) is integrated in the cover (27), and the lower shell (23), within its region enclosed by the shell seal (30), has an air passage orifice (24).

20

9. The assembly space as claimed in claim 8, characterized in that the lower shell (23) is fastened to the underside of the hood (17) and the shell seal (30) is secured to the cover (27).

25

10. The assembly space as claimed in claim 9, characterized in that the lower shell (23) has a trough-shaped design with a planar trough bottom (25) and a trough edge (26) surrounding the trough orifice
30 in a flangelike manner, for lying on the shell seal (30), and in that the air passage orifice (24) is arranged in the trough bottom (25).

PCT/EP03/10391New document of 06.12.2004

- 17 -

11. The assembly space as claimed in one of claims 7 - 10, characterized in that the cover (27) has a peripheral collar (28) and a peripheral flange (29) arranged at one collar edge, and in that the cover (27) lies with its peripheral flange (29) on the continuous seal (31) and at its collar end remote from the flange carries the hood seal (44) or the shell seal (30).

12. The assembly space as claimed in one of claims 7 - 11, characterized in that the water separator (38) has an air guide plate (40) which projects from the cover (27) through the access orifice (15) and runs obliquely with respect to the axis of the access orifice (15) and which extends below a part of the access orifice (15), and in that the waste air orifice (43) lies near the access orifice (15), behind the rear side, facing away from the air passage orifice (24), of the air guide plate (40).

13. The assembly space as claimed in one of claims 1 - 12, characterized by a space bottom (36) and space walls which project from the space bottom (36) and of which one space wall is formed by the dashboard (13) and the opposite space wall is formed by a partition (14), running transversely in the engine space (11), for partitioning off the engine.

14. The assembly space as claimed in one of claims 1 - 12, characterized by its design as a plastic box closed on all sides and open at the top.

15. The assembly space as claimed in claim 13 or 14, characterized in that a water outflow (39) is provided

PCT/EP03/10391

New document of 06.12.2004

- 18 -

in the space bottom (36) or in the bottom of the
plastic box.